

### **Remarks**

The Examiner rejected claims 1–11, 14, and 15 and objected to claims 12, 13, and 16 and the specification. Claims 1, 4, and 5, the title, and the specification have been amended. Claims 1–16 remain in the application.

The specification has been amended on pages 2 and 3 to overcome the Examiner's objection to the inclusion of claim references. The title has been amended to improve its wording, and the paragraph on page 7 has been amended to correct reference number 15 to 17. Claim 4 has been amended to make it clear that the step of synchronizing is achieved by controlling the speed of loading the foodstuffs into the first pipe serpent. Support for the amendment appears on page 9 of the specification. Claims 1 and 5 have been amended to make it clear that the pipe serpent is a spiral, as supported by the specification on page 7, lines 12–13. None of the amendments adds new matter. The rejections are traversed.

### **The 112 Rejections**

The Examiner rejected claims 4 and 10 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention. In particular, the Examiner objected to claim 4 because “it is unclear how the step of ‘synchronizing’ is achieved or what action is actually defined by the step.” Amended claim 4 makes it clear how the synchronizing is achieved. The synchronizing step coordinates of the supply of foodstuffs to the pipe serpent with the speed of rotation of the serpent or its angular position. The faster the serpent rotates, the faster foodstuffs can be supplied to keep it filled. The absorption capacity of the pipe, i.e., its ability to accept input of foodstuffs, depends on the angular position of the serpent. For this reason, the supply of foodstuffs is controlled to supply more or less quantity depending on the angle of the pipe serpent as it rotates and its ability to accept foodstuffs without being over- or under-filled. Therefore, the §112, second paragraph rejection of claim 4 should be withdrawn.

The Examiner rejected claim 10 because there is no structure recited for creating a signal that represents the temperature of food in the pipe. MPEP §2173.02 provides: “In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the

claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent.” Applicants maintain that claim 10 is clear and satisfies the notice function. Claim 10 adds a control unit element, and one of the functions performed by the control unit is receiving a signal representing the temperature of foodstuffs in the first closed pipe segment. What device produces the temperature signal should not be required in the claim because the claim is directed to the control unit and its reception of the signal, not to the device that produces the signal. One of ordinary skill in the art would understand that the signal could be produced by many kinds of temperature-sensing devices that produce signals to be received by other devices. Therefore, the §112, second paragraph rejection of claim 10 should be withdrawn.

### **The 103(a) Rejections**

The Examiner rejected claims 1–9, 11, 14, and 15 under 35 U.S.C. §103(a) as being unpatentable over US 5,275,091 (McFarlane et al.) in view of US 4,310,281 (Crookes). In the rejection, the Examiner stated that “[i]t would have been obvious to one skilled in the art to modify the cross section of the first and second closed pipe sections [of McFarlane et al.], with respect to the axis of rotation, with that taught in Crookes, in order to improve the mixing ability of the pipe serpents.” MPEP §2143.01 provides: “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art.” Crookes teaches, in column 3, lines 50–57: “[T]he mixture travels through successive elbows 11–13 whose centerlines are located in planes which are mutually perpendicular to one another. As a consequence of this course of travel, the streamlines of the flow path are successively lengthened and shortened causing changes of velocities of the streamlines to produce mixing operation.” Crookes teaches that it is not merely the 90° angles of the elbows that are responsible for the mixing, but the fact that the centerlines of successive elbows lie in mutually perpendicular planes. That’s what causes the lengthening and shortening of the streamlines and the consequent velocity changes that produce mixing. The coils in applicants’ spiral pipe serpent do not lie in mutually

perpendicular planes. Rather the pipe forms a spiral along its length, and its streamlines do not shorten and lengthen around the spiral because it is wound in one direction. If the coils of McFarlane's helical food pump were deformed into mutually perpendicular planes as taught by Crookes to be necessary to achieve the desired mixing, the food pump, which follows the Archimedean-screw principle, would not operate as intended. Consequently, the §103(a) rejection of claims 1-9, 11, 14, and 15 is unsupported by the art and should be withdrawn.

Applicant respectfully requests entry of the amendments, reconsideration of the rejections of the claims in view of these remarks, and allowance of the application.

This response is being electronically filed within three months of the Office Action. Any fees considered necessary for consideration of this response may be charged to Deposit Account No. 12-0090. If the Examiner thinks a telephone conference would expedite the prosecution of this application, he is cordially invited to call applicants' attorney.

Respectfully submitted,

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